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NTSB Order No. EA-4277

UNITED STATES OF AMERICA
NATIONAL TRANSPORTATION SAFETY BOARD
WASHINGTON, D.C.

Adopted by the NATIONAL TRANSPORTATION SAFETY BOARD
at its office in Washington, D.C.
on the 10th day of November, 1994

DAVID R. HINSON, Administrator, Federal Aviation Administration, Complainant, v. JAMES C. ROBINSON, Respondent.	Docket SE-13360

ORDER ON REMAND

This case has been remanded to us by the U.S. Court of Appeals for the District of Columbia Circuit for further explanation of our decision in NTSB Order No. EA-4052 (1993), in which we rejected respondent's appeal from the law judge's initial decision and upheld the emergency revocation of his airline transport pilot certificate. Robinson v. NTSB, et al., 28 F.3d 210 (D.C. Cir. 1994), reh'g denied, August 22, 1994. Specifically, the Court has raised several issues which, in the

Court's view, must be addressed or clarified in order to support what the Court believed to be our essential finding: that respondent operated a twin-engine Aerospatiale AS355 helicopter "with only one operable engine," in violation of 14 C.F.R. 91.7(a) and (b), 91.9(a) and 91.13(a).[1]

Respondent has filed motions for stay, for expedited review, and for oral argument, in connection with this remand, all of which are denied.

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[1] These regulations provide as follows:

§ 91.7 Civil aircraft airworthiness.

(a) No person may operate a civil aircraft unless it is in an airworthy condition.
(b) The pilot in command of a civil aircraft is responsible for determining whether that aircraft is in condition for safe flight. The pilot in command shall discontinue the flight when unairworthy mechanical, electrical, or structural conditions occur.

§ 91.9 Civil aircraft flight manual, markings, and placard requirements.

(a) Except as provided in paragraph (d) of this section, no person may operate a civil aircraft without complying with the operating limitations specified in the approved Airplane or Rotorcraft Flight Manual, markings, and placards, or as otherwise prescribed by the certificating authority of the country of registry.
* * *

§ 91.13 Careless or reckless operation.

(a) *Aircraft operations for the purpose of air navigation.* No person may operate an aircraft in a careless or reckless manner so as to endanger the life or property of another.

Factual and Procedural Background[2]

On the evening of May 26, 1993, respondent landed an Aerospatiale AS355 twin-engine helicopter at Wall Street Heliport, New York City, where he was to pick up his passenger, Robert Brennan, an investment banker who was also the owner of the helicopter. Soon after respondent's arrival at Wall Street, a warning light on the control panel (known as a "chip light") came on indicating that metal particles were present in the oil of the number two engine. It is undisputed that the metal particles which cause a chip light to illuminate can sometimes be cleared, and the chip light extinguished, by pressing a "chip

[2] The key factual allegations in the Administrator's complaint were as follows:

> 2. On or about May 26, 1993, you operated an Aerospatiale AS355 helicopter, owned by PAB Aviation, Inc., . . . at Wall Street/Downtown Manhattan Heliport, New York City.
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> 3. You attempted to take-off carrying a passenger but set the helicopter back down and the passenger disembarked.
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> 4. A malfunction in one of the helicopter's two engines caused you to discontinue the take-off.
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> 5. Subsequent to the passenger's disembarkation, you took off in [the helicopter] and flew the aircraft from the Wall Street Heliport to Allaire Airport in Farmingdale, NJ, under the power of a single engine.
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> 6. No repairs to the malfunctioning engine had been accomplished between your attempt to take-off with the passenger and your subsequent flight to Allaire Airport.
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> 7. Departing with only one operable engine contravenes the pilot action called for in the AS355 Aircraft Flight Manual.
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> 8. The failure of the remaining engine would have caused an unwarranted hazard to persons and property on the ground and to the helicopter itself.

pulse" switch on the control panel. The helicopter can then be operated safely and normally without any further action. However, it is also undisputed that if a chip light cannot be extinguished by pressing the chip pulse switch, that means the metal particles are too large to be cleared and that engine failure could be imminent. Therefore, continued operation after an unextinguished chip light is considered unsafe, and is contrary to the limitations in the aircraft flight manual.

Respondent contended that he successfully extinguished the chip light he experienced at Wall Street by pressing the chip pulse switch. However, the Administrator's position in this case -- that respondent experienced an engine malfunction at Wall Street which ultimately caused him to depart under the power of a single engine -- was implicitly based on the premise that the engine trouble respondent experienced at Wall Street could not be corrected by pressing the chip pulse switch.

Respondent did not deny that he told the heliport senior operations agent (John Licciardi) that he was having trouble with the number two engine, that he could not move the helicopter to the transient area where passengers are normally picked up, and that he asked for his passenger to be escorted to the helicopter. It is further undisputed that, after Brennan boarded, respondent did not take off normally but, rather, "skidded" along the ground in a manner typical of an under-power takeoff run. His running takeoff maneuver did not result in a successful takeoff, and Brennan disembarked. Respondent called for another helicopter to

pick up Brennan, and respondent ultimately departed the heliport alone, again using the running takeoff maneuver, this time successfully.

Respondent does not dispute that the running takeoff maneuvers he used at Wall Street are commonly used when a helicopter's engines are not producing sufficient power to accomplish a normal takeoff. He maintains, however, that he employed the maneuvers while using reduced engine power merely to *simulate* an under-power takeoff, and that both engines were fully operational at all times at Wall Street. According to respondent, after simulating an attempted under-power takeoff with the passenger on board, he determined that the helicopter would be too heavy to safely continue the flight should there be actual engine trouble during the flight. Therefore, he claims, he summoned another helicopter to transport his passenger and then burned off fuel for approximately one hour to further reduce the helicopter's weight. After burning off fuel, respondent again employed a running takeoff. Respondent maintains he intentionally used reduced power, purportedly to simulate and evaluate the helicopter's performance in the event of actual engine trouble en route. He maintains that, once he determined that continued flight would be safe under those circumstances, he increased power and accomplished the actual takeoff with full power from both engines.

It is undisputed that when respondent reached Allaire Airport (the helicopter's maintenance base) -- after a flight of

only seventeen minutes from the Wall Street heliport -- the chip light was on and the number two engine had failed. After respondent landed the helicopter with power from only one engine, the helicopter was examined by John Ford, director of maintenance for Raco Helicopters, who testified that "the engine was a bit too warm to be playing with it" at that time. Later that evening, he began removing the engine, and it was subsequently repaired. Repair records indicate that the engine had a "chip indication and power failure." (Exhibit A-8.)

Respondent contended that the chip light and engine failure occurred only moments before landing at his destination airport. The Administrator argued, however, that the sequence of events in this case -- the admitted chip light and reported "engine trouble" at Wall Street; the departure of the sole passenger after an unsuccessful running takeoff; the apparent necessity to further reduce weight by burning fuel for one hour; the use of a running takeoff even when the helicopter (designed to carry six people) was carrying only one occupant and a reduced fuel load; and the presence of an unextinguished chip light and engine failure upon landing -- raised a strong inference that the engine trouble had occurred at Wall Street, and that respondent therefore departed from Wall Street under the power of a single engine.

The Administrator challenged the plausibility of respondent's assertions that his reduced-power takeoff runs were merely simulations to ensure that single-engine performance would

be possible if necessary, and that the removal of his passenger and subsequent fuel-burning were precautionary measures to prepare for possible future engine trouble, noting that, according to respondent's version of events, there would be no reason for such extreme caution or concern. Although respondent had admittedly experienced a chip light at Wall Street, he claimed to have extinguished it successfully. All of the expert witnesses (both the Administrator's and respondent's) agreed that a successfully extinguished chip light requires no further action, and normal operations can continue without any safety precautions.

The law judge, after first recognizing that the case turned on credibility, found that the Administrator had sustained his burden of proving the allegations in the complaint. Thus, he implicitly rejected as incredible respondent's explanation of his unusual takeoff maneuvers and his assertion that he accomplished at least the final phase of his successful takeoff with full power on both engines. He found that respondent had experienced engine trouble at Wall Street, and that he made the flight to Allaire airport under the power of a single engine.

On appeal to the full Board, respondent challenged the law judge's credibility finding and contended that the factual findings were unsupported by evidence in the record. We rejected respondent's appeal, holding that there was "abundant circumstantial evidence to support the law judge's conclusion that, despite his denials, respondent experienced engine failure

at Wall Street but took off nonetheless." Administrator v. Robinson, NTSB Order No. EA-4052 at 7 (1993).

The Court's Decision

In his appeal to the Court of Appeals, respondent argued that our decision was arbitrary, capricious, and unsupported by substantial evidence.[3] The Court made no finding on this point, but rather, remanded the case to us for further clarification of our findings, and for explanation of how we evaluated testimony which the Court believed to be corroborative of respondent's position. Each of the points raised by the Court is discussed below.

1) Did the Board find that the engine was "inoperable" or "not operating"?

After noting our conclusion that respondent "experienced engine failure at Wall Street," the Court continued:

> However, the ALJ found both that [respondent] left the Wall Street Heliport "under the power of a single engine," and that he departed from the Heliport "with only one operable engine." These are different findings, but their difference is not acknowledged in either the ALJ's findings or the Board's order. Neither finding is supported by more than Licciardi's observations and suppositions and the FAA's investigator's conclusions about them. . . . Furthermore, no witness for the FAA testified that one of the engines was "inoperable" at the critical time. FAA Investigator Winton testified only that the engine was either "inoperative" (i.e., not operating) or "at idle" at the time of the takeoff.

28 F.3d at 216.

The key factual allegation in this case, upheld by the law judge and the full Board, was that respondent departed Wall

[3] Respondent also challenged the FAA's use of its emergency authority in this case. The court found this issue was moot.

Street "under the power of a single engine" (i.e., the other engine was not operating). While the evidence in this case suggests that respondent may indeed have departed with only one operable engine, we need not conclusively decide whether the engine was "inoperable" or "not operating." Although the FAA's complaint (affirmed in its entirety by the law judge) alleged that "[d]eparting with only one operable engine contravenes the pilot action called for in the [helicopter] Flight Manual," the record makes clear that both parties recognized from the start that the key issue was whether respondent departed "under the power of a single engine" (i.e., the other engine was not operating).[4] The distinction between "inoperable" and "not operating" was not emphasized by either party because it was unimportant in the context of this case.

The Administrator's investigating inspector (Anthony Winton) concluded that the undisputed sequence of events at Wall Street

[4] See, e.g., respondent's initial appeal from the emergency order of revocation (in which he denies taking off "under power of a single engine"), and his answer to the Administrator's complaint (in which he denies "operat[ing] on only one engine"). Neither document makes any reference to whether or not the other engine was "operable." Similarly, in his appeal of the law judge's decision to the full Board, respondent continued to phrase the issue as whether there was evidence that he "flew under the power of one engine." (Respondent's appeal brief at 23.) Even in their filings before the Court of Appeals, the parties recognized that, in respondent's words, "[t]he controversy centers around the sole issue of whether [respondent] departed the Wall Street Heliport on May 26, 1993 with only one engine operating." (Brief of Petitioner [Respondent] at 16; similar language appears at pages 22, 23, 25, 26.) Thus, the issue has always been clearly understood as whether the engine was "operating." At no point in these proceedings have the parties focused on the distinction between that issue and the issue of whether the engine was "operable."

indicated that something was wrong with one engine, and that "*therefore* [respondent] took off with either one engine inoperative or one engine at idle." (Tr. 151-52, emphasis added.) Although the Court seems to suggest that this testimony was somehow at odds with the Administrator's position that respondent experienced engine failure[5] at Wall Street, we read Inspector Winton's testimony as stating that the lack of power from one engine, even if voluntarily induced by respondent, was a direct result of the engine problem he experienced at Wall Street. Moreover, there was expert testimony that taking off under the power of a single engine -- regardless of whether the reduction in power is self-imposed or not -- is both unsafe and contrary to airworthiness requirements. (Tr. 118-19.)

Thus, the violations in this case (operation of an unairworthy aircraft, operation contrary to flight manual limitations,[6] and careless or reckless operation) are established regardless of whether the engine was inoperable or not operating.

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[5] Respondent's own witness acknowledged that "engine failure" means anything less than full power output. (Tr. 261.)

[6] Although the Administrator's complaint asserts that "[d]eparting with only one operable engine contravenes the pilot action called for in the AS355 Aircraft Flight Manual," no such manual provision was placed into evidence. There was, however, expert testimony that taking off with an unextinguished chip light would be contrary to the Manual. (Tr. 101-02.) Although no such prohibition is explicitly articulated in the Manual, emergency procedures are prescribed for a chip light occurring in flight: "reduce the affected engine output power to the minimum required for flight and land as soon as practicable." (Exhibit A-9.) FAA Inspector Winton reasoned that the manufacturer would not think a pilot would be "dumb enough" to take off with an unextinguished chip light. (Tr. 157-58, 175.)

In our view, the Court's comment that neither finding is supported by more than Licciardi's observations and suppositions and the FAA inspectors' conclusions about them, minimizes the significance of Licciardi's observations and seems to overlook the fact that Licciardi's factual account of what respondent did and said at Wall Street was undisputed by respondent. Moreover, as we noted in our earlier decision, the *conclusions* Licciardi drew from respondent's activities at the heliport (i.e., that respondent attempted, and ultimately accomplished, a single-engine takeoff), though consistent with the Administrator's position, were not critical to the Administrator's case. NTSB Order No. EA-4052 at 7, n. 7. His *observations* -- when coupled with the undisputed existence of an unextinguished chip light and engine failure upon respondent's landing at Allaire airport -- were sufficient to raise the inference of single-engine operation upon which the Administrator's case rests.

2) How did the Board evaluate testimony which corroborated respondent's position?

The Court found pertinent the testimony of John Ford, director of maintenance of Raco Helicopters, and Robert Brennan, respondent's passenger. Respondent asserted to the Court that these two witnesses "completely corroborated [his] version of what transpired on May 26, 1993." The Court discussed their testimony as follows:

> Ford testified that when the helicopter landed at the Allaire Airport, the number two engine was too warm to handle. Ford explained that a nonoperating engine generates no heat and that fire walls prevent heat transfer from one engine to the other. In other words, Ford provided direct

> evidence, [respondent] argues, that the number two engine was in operation during the flight from Wall Street Heliport.
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> . . . Brennan testified that he saw both engine levers up, indicating that the two engines were operating before [respondent] left Wall Street. Ford testified that the second engine was too hot to handle when [respondent] landed at Allaire Airport, indicating that it had been operating during the flight from Wall Street. No evidence in the record contradicts either witness' testimony.
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> The Board's order does not mention Ford's testimony, much less explain how the Board evaluated it. . . . Ford's testimony presented direct corroboration of a critical fact contrary to the basis for the revocation of [respondent]'s certificate, namely that he took off with only one operable engine. . . . So far as we can determine, unless it had decided to discredit Ford, there was no reason for the Board not to conclude that the second engine was "operable" at some point during the flight from the Wall Street Heliport.

28 F.3d at 215-16.

Ford's entire testimony on this point can be summarized as follows: After respondent landed at Allaire, he told Ford that he had a problem with one of the engines and he had a chip light on. When Ford began to inspect the engine he found the engine was "too warm to be handling" at that time. When asked what the temperature of the number two engine would have been if respondent had flown from Wall Street on only one engine, Ford said, "I wouldn't think it would be much temperature in the engine at all if it was flown from Wall Street down to us . . . [t]here would be no way that it could generate heat." When asked why it would not have heat from the number one engine, Ford stated, "heat doesn't transfer from one engine to the other [because] . . . it has fire walls in between." (Tr. 242-44.)

Contrary to the Court's assumption, Ford's testimony that the engine was too warm to be handled does not necessarily

indicate that it was operating (i.e., putting out power) during the flight from Wall Street. Even assuming the accuracy of his statement that heat would not transfer from one engine to the other, there are other factors which could have accounted for the warm engine, such as heat transfer from other non-engine components of the aircraft (e.g., the transmission), residual heat from having been operated prior to its shutdown,[7] or the possibility (as noted by Inspector Winton) that respondent kept the malfunctioning engine at idle.[8] Further, Ford's opinion that a non-operating engine would not have been warm after the 17-minute flight from Wall Street to Allaire did not take into account that the helicopter was operating continuously for at least an hour (to burn off fuel) immediately prior to that 17-minute flight, and the likelihood that the helicopter had made other flights (with both engines operating) earlier that day.[9]

Thus, we did not have to discredit Ford's testimony in order to conclude that it was insufficient to rebut the strong inference raised by the Administrator's evidence in this case that the number two engine was not producing power during the flight from Wall Street.

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[7] In this regard, we note that the malfunction which ultimately led to the engine's shutdown might well have caused it to run at a higher than normal temperature.

[8] An engine at idle, although not producing usable power, will nonetheless generate heat.

[9] Although respondent stated he could not remember where he had been immediately prior to landing that evening at Wall Street, he testified that he flies an average of five or six flights a day in this helicopter. (Tr. 297.)

Regarding Brennan's testimony that he could tell from the position of two "levers" that both engines were "running" when he left the helicopter at Wall Street (Tr. 223-4), we do not believe it necessarily follows that because an engine appears to be "running," it is producing power. An engine which is at idle may indeed appear to be "running." To the extent Brennan meant to say that both engines were producing power, we think the law judge's decision implicitly rejects any such assertion on credibility grounds. Moreover, Brennan's observation of the position of the levers at the time he left the helicopter, even if credited,[10] has little relevance to the Administrator's position that respondent *thereafter* took off and flew from Wall Street to Allaire Airport under the power of a single engine.

3) Did the law judge misinterpret the FAA inspectors' testimony?

Finally, the Court expressed concern over what it viewed as the law judge's misplaced reliance on a portion of the FAA inspectors' testimony:

> The Board's approval of the ALJ's reliance on . . . the FAA investigators' surprise that [respondent] would take off after the chip light came on is flawed. While the ALJ acknowledged the extensive evidence about the operation of the chip light system, the ALJ gave no weight to the fact that if the chip light goes out the helicopter is safe to fly. Instead, the ALJ focused on [respondent]'s response to the chip light indication at the heliport that the FAA inspectors characterized as surprising and foolhardy. The inspectors' conclusions about [respondent]'s conduct, however, rested on the assumption that he took off with only one operable engine.

[10] In this regard, we question how respondent could have simulated a reduced power takeoff while Brennan was on board, as he claims he did, with both engines at full throttle.

28 F.3d at 216-17.

In his initial decision, the law judge stated, "Inspector Lesniak and Inspector Winton both have said they were greatly surprised that [respondent] would even take off in a helicopter after having this chip light come on and having obvious engine trouble with engine number two . . . they felt it was almost foolhardy for [respondent] to continue to fly this helicopter and leave the Wall Street Heliport with what he had experienced." (Tr. 348-49.)

The FAA presented expert testimony both that taking off with only one engine producing power, *and* that taking off with an unextinguished chip light would be unsafe, and therefore unwise. We think the law judge's comments indicate his belief that respondent took off when both conditions (one engine not producing power, and an unextinguished chip light) were present. We see nothing improper about his reliance on expert testimony that a prudent pilot would not take off under either or both of those conditions.

ACCORDINGLY, IT IS ORDERED THAT:

In view of the foregoing elaboration of our reasons for denying respondent's appeal from the Administrator's order of revocation, no change in NTSB Order No. EA-4052 is warranted.

HALL, Chairman, LAUBER, HAMMERSCHMIDT and VOGT, Members of the Board, concurred in the above order.